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ABSTRACT

Screening tests consisting of observation procedures and simple physical exercises requiring only a chinning bar, stopwatch, and record forms are suggested for identifying pupils aged ten to seventeen who are underdeveloped in strength, flexibility, agility, or cardiorespiratory endurance. Classes should be divided into pairs with one pupil acting as scorer while the other performs the test. Tests consist of (1) pull-ups (boys) or flexed arm hand (girls) for measuring strength, (2) situps for measuring flexibility, (3) squat thrust for measuring agility, and (4) a recovery index test for measuring caridorespiratory endurance. Performance standards for each test are given, and observable signs in pupils during or after exercise which may indicate a need for medical referral are listed. Remedial programs are suggested for those who fail the screening test standards. (MB)

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THE PRESIDENT'S COUNCIL ON PHYSICAL FITNESS AND SPORTS

Identification of Physically Underdeveloped Pupils: Activities to Improve Their Performance

Screening Tests

Screening to identify underdeveloped pupils consists of the following simple tests which measure strength, flexibility, cardiorespiratory endurance and agility.

1. Strength - pullups or flexed arm hang and situps
2. Flexibility - situps
3. Agility - squat thrusts
4. Cardiorespiratory endurance - recovery index test and observation

Instructions for Administration of Tests

Divide the class into pairs for testing. One pupil acts as scorer while the other pupil performs the test. The leader should score each student in the pullup and flexed arm hang and the pulse recovery test unless well trained student leaders are available.

Results are recorded after each test.

The only equipment needed is a chinning bar, a stopwatch (or a watch with a sweep second hand) and record forms.

1. PULLUPS (Boys)

Equipment: A bar of sufficient height, comfortable to grip.

Starting Position: Grasp the bar with forward grip, palms facing forward. Hang with arms and legs fully extended. Feet must be free of floor. The partner stands slightly to one side of the pupil being tested and counts each successful pullup.

Action: 1. Pull body up with the arms until the chin is above the bar.

SP011 149

2. Lower body until the elbows are fully extended.

3. Repeat the exercise the required number of times.

Rules: 1. The pull must not be a snap movement.

2. Knees must not be raised.

3. Kicking the legs is not permitted.

4. The body must not swing. If pupil starts to swing, his partner stops the motion by holding an extended arm across the front of the pupil's thighs.

5. One complete pullup is counted each time the pupil places his chin over the bar.

To Pass: Ages 10-13--1 pullup
Ages 14-15--2 pullups
Ages 16-17--3 pullups

2. FLEXED ARM HAND (Girls)

Equipment: A stop watch and a sturdy bar, comfortable to grip and adjustable in height (height of bar should be approximately the same as that of pupil being tested).

Starting Position: Assume body position with overhand grip so that chin is above bar, elbows are flexed and chest is close to bar. Feet must be clear of floor.

Action: Hold position as long as possible.

Rules: 1. Start timing as soon as pupil is in proper position.

2. Stop timing when: (a) pupil's chin touches bar; (b) pupil's head tilts back to keep chin above bar; (c) pupil's chin drops below bar.

To Pass: All ages--hold position for ten seconds.

3. SITUPS

Starting Position: Pupil lies on his back with knees bent, feet on floor about one foot apart. The angle of the knees should be less than 90 degrees. The hands with fingers interlaced, are grasped behind the neck with elbows squarely on the floor. Another pupil holds his partner's ankles and

keeps his heels in contact with the floor while counting each successful situp.

Action: 1. Sit up and turn the trunk to the left. Touch the elbow to the left knee.

2. Return to starting position.

3. Sit up and turn the trunk to the right. Touch the left elbow to the right knee.

4. Return to the starting position.

5. Repeat the required number of times.

6. One complete situp is counted each time the pupil returns to the starting position.

To Pass: Girls, ages 10-17--10 situps
Boys, ages 10-17--14 situps

4. SQUAT THRUST (Boys and Girls)

Equipment: A stopwatch or a watch with a sweep second hand.

Starting Position: Pupil stands at attention.

Action: 1. Bend knees and place hands on the floor in front of the feet. Arms may be between, outside, or in front of the bent knees.

2. Thrust the legs back far enough so that the body is perfectly straight from shoulders to feet (the pushup position).

3. Return to squat position.

4. Return to starting position.

Scoring: The teacher carefully instructs the pupils on how to do correct squat thrust. Pupils are told to do as many correct squat thrusts as possible within a 10 second time limit. The teacher gives the starting signal, "ready! go!" On "go", the pupil begins. The partner counts each squat thrust. At the end of 10 seconds, the teacher says, "stop."

Rule: The pupil must return to the erect position of attention at the completion of each squat thrust. Only count full movements, not 1/4, 1/2, or 3/4s.

To Pass: Girls, ages 10-17--3 squat thrusts in 10 seconds.
Boys, ages 10-17--4 squat thrusts in 10 seconds.

5. RECOVERY INDEX TEST AND OBSERVATION OF PUPILS

(Excerpts from a statement by the American Medical Association Committee on Exercise and Fitness)

The recovery Index Test consists of stepping up and down a platform 16 inches high, 30 times a minute for four minutes. The height of the platform may vary from 14 inches for shorter students to 20 inches high for taller youths. The subject faces the platform and starting with either foot at the signal "Up," places his foot on the platform, then steps up so that both feet are on the platform, then immediately steps down again in the same rhythm. The subject then continues stepping up and down in a marching count, "Up--two, three, four." The signal "Up" comes every two seconds.

After four minutes of this exercise, the subject sits down and remains quiet. One minute later, the pulse rates are taken. Older students, under the supervision of the school nurse or other teachers, can be paired to take each other's pulse rates. The following schedule is used:

1. one minute after the exercise for 30 seconds.
2. two minutes after the exercise for 30 seconds.
3. three minutes after the exercise for 30 seconds.

To determine the Recovery Index, add the three pulse counts and refer to the following table.

When the three 30-second pulse counts total:	The Recovery Index is:	Then the response to this test is:
199 or more	60 or less	Poor
from 171 to 198	between 61 and 70	Fair
from 150 to 170	between 71 and 80	Good
from 133 to 149	between 81 and 90	Very Good
132 or less	91 or more	Excellent

A pupil who stops before the test is completed almost always is in poor physical condition. If there are other symptoms of stress the pupil may require referral to the school nurse or a physician. Skillful observation of the reactions of individual pupils to exercise is a primary screening technique.

Observable signs in pupils during or after vigorous exercise which may indicate undesirable response to exercise are as follows. If the following signs occur, the pupil should be referred to the school nurse or a physician:

1. Excessive breathlessness--some is normal but if it persists long after exercise, it should be checked.
2. Bluing of the lips--except in a cold wet environment.
3. Pale or clammy skin or cold sweating during or following exercise.
4. Unusual fatigue.
5. Persistent shakiness after exercise.
6. Muscle twitching.

A number of symptoms relating to exercise which are sometimes reported to the teacher may also be cause for medical referral. If any of the following are recurring or develop in persistent patterns related to exercise the pupil should be checked medically:

1. Headache
2. Dizziness
3. Fainting
4. Broken nights sleep
5. Digestive upset
6. Pain not associated with injury
7. Undue pounding or uneven heartbeat
8. Disorientation or personality changes

A poor reaction to exercise is usually a sign of a low level of physical fitness rather than of disease. A medical referral is an important precaution, however, if there is any question about the response of any pupil to exercise.

Remedial Program for Those Who Fail the Screening Tests*

When possible, a special remedial program designed to correct the individual weaknesses revealed in the screening test should be provided. If local conditions do not permit such special instructions, the needs of the underdeveloped should be met during the regular physical education period. This can be done by having the entire class, for a portion of the period, participate in activities designed to correct the weaknesses of the underdeveloped.

The teacher should explain to each underdeveloped pupil that additional exercises and activities at home will help to overcome particular weaknesses. The teacher should explain the purposes of the program to the parents of the underdeveloped child to enlist their support in the adequate physical development of their child.

TEST FAILED	DEVELOPMENTAL ACTIVITY	SUGGESTED STARTING AMOUNT
Squat Thrust	Tortoise & Hare, p. 57	3 minutes
	Jump & Reach, p. 39	15 repetitions
	The Sprinter, p. 40	10 repetitions
	Jumping Jack, p. 56	25 repetitions
	Coordinator, p. 42	5 repetitions
Situps	Weight Training, ps. 53-59	
	Knee Raise (single & double) p. 36	10 each leg
	Head & Shoulder Curl, p. 38	10 repetitions
	Head Raiser, p. 36	5 repetitions
	Back Twist, p. 71	5 each side
	Up Oars, p. 66	10 repetitions
Pullups & Flexed Arm Hang	Weight Training, ps. 53-59	
	Wing Stretches, p. 5	25 repetitions
	Biceps Building, p. 31	5 each arm
	Reclining Pullups, p. 30	10 repetitions
	Flexed Arm Hang, p. 46	As long as possible

Program suggestions to improve cardiorespiratory endurance through aquatics, interval training and jogging are included on pages 60-67.

*All exercise references can be found in Youth Physical Fitness - Suggestions for School Programs, 1973. For sale by the Superintendent of Documents, U.S. Gov't Printing Office, Washington, D.C. 20402. Price $1.35